

Listing of Claims

The listing of the claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A multi-modal medical device system that provides treatment therapy for a nervous system disorder, comprising:

an implantable component configured for multi-modal operation, the implantable component configured to apply to support a first treatment therapy mode;

a first external component configured to receive data from the implantable component and to support a second treatment therapy mode in accordance with the data; and

a first communications channel configured to optionally couple the implantable component and the external component, wherein, in operation, the data is transported over the communications channel,

wherein the implantable component is configured to operate with the first treatment therapy mode when the external component is decoupled from the communications channel and to automatically switch to the second treatment therapy mode when the external component is coupled to the communications channel, wherein, in operation, the second treatment therapy mode is responsive to the data being transported over the communications channel.

2. (Previously Presented) The multi-modal medical device system of claim 1, further comprising:

a programmer configured to directly communicate with the implantable component through the external component over the first communications channel in order to support a third treatment therapy mode.

3. (Previously Presented) The multi-modal medical device system of claim 1, further comprising:

a programmer configured to indirectly communicate with the implantable component through the first external component in order to support a third treatment therapy mode.

4. (Original) The multi-modal medical device system of claim 1, wherein the first communications channel comprises a telemetry channel.

5. (Previously Presented) The multi-modal medical device system of claim 4, further comprising:

a relaying module configured to enhance a signal on the telemetry channel from the first external component to the implantable component.

6. (Previously Presented) The multi-modal medical device system of claim 1, wherein the implantable device comprises a memory configured to store the data that is transported over the first communications channel.

7. (Previously Presented) The multi-modal medical device system of claim 1, wherein the first external component comprises an interface configured to couple to a triggering device and wherein, in operation, an activation of the triggering device is indicative of a relevant event that affects at least one of the treatment therapy modes.

8. (Previously Presented) The multi-modal medical device system of claim 1, wherein the first external component comprises an interface configured to couple to a second communications channel, and wherein the first external component is configured to send messaging over the second communications channel that is indicative of at least a portion of the data.

9. (Previously Presented) The multi-modal medical device system of claim 1, wherein the first external component comprises:

a module that supports another treatment therapy mode when the first external component is coupled to the implantable component through the first communications channel.

10. (Previously Presented) The multi-modal medical device system of claim 1, further comprising another external component that is coupled to the first external component, wherein the other external component comprises a module that supports another treatment therapy mode when the other external component is coupled to the first external component and when the first external component is coupled to the implantable component.

11. (Previously Presented) A multi-modal medical device system that provides treatment therapy for a nervous system disorder, comprising:

an implantable component configured for multi-modal operation, that applies the treatment therapy and that supports a first treatment therapy mode;

an external component configured to receive data from the implantable component, the external component comprising a first module that supports a second treatment therapy mode when the external component is coupled to the implantable component; and

a communications channel configured to couple the implantable component with the external component, the data, in operation, being transported over the communications channel,

wherein the implantable component is configured to operate with the first treatment therapy mode when the external component is decoupled from the communications channel and to automatically switch to the second treatment therapy mode when the external component is coupled to the communications channel, wherein, in operation, the second treatment therapy mode is responsive to the data being transported over the communications channel.

12. (Previously Presented) The multi-modal medical device system of claim 11, wherein the external component further comprises an additional module that supports an additional treatment therapy mode when the external component is coupled to the implantable component, and wherein different treatment therapy mode is either the another treatment therapy mode supported by the first module or the additional treatment therapy mode supported by the additional module.

13. (Previously Presented) A method for a treatment of a nervous system disorder with a medical device system with a medical device system, comprising:

- (a) applying a treatment therapy to a patient for the nervous system disorder;
- (b) supporting a first treatment therapy mode with an implantable component configured for multi-modal operation;
- (c) exchanging data from the implantable component to an external component; and
- (d) if the external component and the implantable component are coupled, automatically switching to a second treatment therapy mode with the external component in accordance with the data.

14. (Previously Presented) The method of claim 13, further comprising:

(e) if the external component and the implantable component are decoupled, operating the medical device system with the first treatment therapy mode.

15. (Previously Presented) The method of claim 13, wherein the first treatment therapy mode corresponds to an open-loop treatment therapy and the second treatment therapy mode corresponds to a closed-loop treatment therapy.

16. (Previously Presented) The method of claim 13, wherein the data comprises neurological data, wherein the first treatment therapy mode corresponds a basic loop recording capability, and wherein the second treatment therapy mode corresponds to an enhanced loop recording capability.

17. (Previously Presented) The method of claim 16, wherein (b) comprises storing the neurological data by the implantable component, and wherein (d) comprises retrieving the neurological data from the implantable component and storing the neurological data by the external component.

18. (Previously Presented) The method of claim 16, wherein (b) comprises storing the neurological data by the implantable component, and wherein (d) comprises retrieving the neurological data from the implantable component and sending the neurological data to an external site by the external component.

19. (Original) The method of claim 18, wherein (d) further comprises:
communicating with a health care professional about the neurological data.

20. (Original) The method of claim 19, wherein the data further comprises location information, the location information being indicative of a location of the patient.

21. (Previously Presented) The method of claim 13, further comprising:
(e) determining if the implantable component and the external component are decoupled.

22. (Original) The method of claim 21, wherein (e) comprises:

(i) monitoring whether communications with the external component is maintained;

(ii) if the communications has been disrupted for a predetermined time interval, presuming that the external component is decoupled.

23. (Previously Presented) The method of claim 13, further comprising

(e) f the external component and the implantable component are coupled, simultaneously supporting a third treatment therapy mode and the second treatment therapy mode with the external component in accordance with the data.

24. (Original) The method of claim 13, wherein the medical device system comprises a hybrid system.

25. (Original) The method of claim 13, wherein the medical device system comprises an external system.

26. (Original) The method of claim 13, wherein the nervous system disorder is selected from the group consisting of a disorder of a central nervous system, a disorder of a peripheral nervous system, a mental health disorder, and a psychiatric disorder.

27. (Original) The method of claim 26, wherein the nervous system disorder is selected from the group consisting of epilepsy, Parkinson's disease, essential tremor, dystonia, multiple sclerosis (MS), anxiety, a mood disorder, a sleep disorder, obesity, and anorexia.

28. (Original) The method of claim 13, wherein the treatment therapy is selected from the group consisting of electrical stimulation, magnetic stimulation, drug infusion, and brain temperature control.

29. (Original) The method of claim 13, wherein the treatment therapy is provided to a location of a body selected from the group consisting of a brain, a vagal nerve, a spinal cord, and a peripheral nerve.

30. (Previously Presented) The method of claim 13, wherein the first treatment therapy mode corresponds to an open-loop treatment therapy and wherein the second treatment therapy mode corresponds to an incremental treatment therapy.

31. (Previously Presented) The method of claim 30, wherein the data comprises neurological data, the method further comprising:

- (e) monitoring the neurological data
- (f) triggering a delivery of the incremental treatment therapy in response to (e).

32. (Original) The method of claim 30, wherein the incremental treatment therapy comprises
an application of a pharmaceutical agent.

33 (Original) The method of claim 32, wherein the incremental treatment therapy further comprises an application of electrical stimulation.

34. (Previously Presented) The method of claim 13, wherein the data comprises neurological data and wherein the second treatment therapy mode supports an alarm in response to the neurological data, the neurological data being indicative of an impending medical condition.

35. (Previously Presented) The method of claim 13, wherein the second treatment therapy mode enhances a functionality, the functionality being supported by the first treatment therapy mode.

36. (Previously Presented) The method of claim 13, wherein the second treatment therapy mode supports another functionality than a first functionality that is supported by the first treatment therapy mode.

37. (Previously Presented) A method for a treatment of a nervous system disorder with a medical device system, comprising:

- (a) applying a treatment therapy to a patient for the nervous system disorder;
- (b) supporting an open-loop mode of the treatment therapy with an implantable component configured for multi-modal operation;

(c) exchanging neurological data between the implantable component and an external component;

(d) if the external component and the implantable component are coupled, automatically switching to a closed-loop mode with the external component in accordance with the neurological data; and

(e) if the external component and the implantable component are decoupled, automatically switching the medical device system to the open-loop mode of the treatment therapy.

38. (Previously Presented) The system of claim 1, wherein the data includes signal measurements and the first mode is open-loop treatment therapy and the second mode is closed-loop treatment therapy, wherein, in operation, the closed loop treatment therapy provided is directly responsive to the signal measurements.

39. (Previously Presented) A method for treatment of a nervous system disorder with a medical device system, comprising:

(a) providing an open-loop treatment therapy with an implantable component configured for at least two modes of operation, the open-loop treatment therapy being one of the at least two modes of operation;

(b) periodically sending a signal to an external component;

(c) in response to receiving a reply within a predetermined period, providing neurological data to the external component over a communication channel, the neurological data being responsive to the open-loop treatment therapy; and

(d) in response to providing the neurological data to the external component, receiving instructions for providing closed-loop treatment therapy over the communication channel from the external component, the closed-loop treatment therapy being adjusted in response to the neurological data being provided over the communication channel, the closed-loop treatment being another of the at least two modes of operation.